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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/308,770	10/28/1999	FRITZ SCHWERTFEGER	3259.81131	6628

7590 04/16/2003

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EXAMINER

JOLLEY, KIRSTEN

ART UNIT

PAPER NUMBER

1762

25

DATE MAILED: 04/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-25

Office Action Summary	Application No.		Applicant(s)	
	09/308,770		SCHWERTFEGER, FRITZ	
	Examiner		Art Unit	
	Kirsten Crockford Jolley		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-18, 20-22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Response to Arguments

1. The objections to the specification have been withdrawn in response to Applicant's amendments to the specification. Additionally, claims 19 and 23 are allowed in response to Applicant's amendments to claim 19.
2. Applicant's arguments filed February 7, 2003 have been fully considered but they are not persuasive.

Applicant argues that nowhere in Lentz is there any teaching or suggestion to use organic solvent to wash Lentz's hydrogel essentially free of water, followed by addition of disiloxane silylating agent meeting the claimed formula. The Examiner disagrees. Applicant admits on page 5 of the response that Lentz discloses that its hydrogel can be converted to an organogel by mixing with organic solvent, and that the solvent can be added before, after or simultaneous with the addition of organosilicon compounds. Lentz specifically states that the silica hydrogel can be converted into an organogel by "replacement of the water with an organic solvent" (col. 3, lines 49-53). "[R]eplacement of the water with an organic solvent" would necessarily meet Applicant's limitation of washing the hydrogel essentially free of water with organic solvent, particularly in light of the Examples in Applicant's specification, for example on page 21 which states "then the water is exchanged for acetone with 3 liters of acetone" to describe the washing step. Additionally, in an exemplary embodiment of the above-described sequence of process steps - Example 10, Lentz states "the hydrogel is thereafter washed with ethanol to remove the water and then with methylene chloride to remove the alcohol..." Therefore, Lentz clearly

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teaches that its step of replacing water with an organic solvent is a *washing* step. Further, the terms “replace” and “remove” clearly indicate that the water is removed *in its entirety*.

As to the second part of Applicant’s argument regarding the addition of the claimed disiloxane silylating agent, Lentz teaches that organosilicon compounds may be added *after* addition of the organic solvent (the washing step), as discussed above. Lentz further teaches that the organosilicon compounds used may include hexaethyldisiloxane (col. 4, line 21); hexaethyldisiloxane meets Applicant’s claimed disiloxane formula.

Applicant additionally argues that Example 10 of Lentz fails to teach each and every element of the claims because it uses trimethylchlorosilane, therefore Lentz fails to anticipate the claims. The Applicant argues that the Examiner’s position that it would have been obvious to have substituted hexaethyldisiloxane for trimethylchlorosilane because of the obvious lack of chloro groups in hexaethyldisiloxane. The Examiner disagrees. Trimethylchlorosilane is used as an exemplary embodiment of the “organosilicon compound” of Lentz’s invention in Example 10. As examples of other successful organosilicon compounds, Lentz teaches hexaethyldisiloxane (col. 4, lines 21). While hexaethyldisiloxane is admittedly different than trimethylchlorosilane, it is noted that as other alternatives of organosilicon compounds in the invention, Lentz teaches diethyldichlorosilane or allylmethyldichlorosilane, etc. (see col. 4, lines 11-27) which also have chloro groups. Since Lentz teaches that hexaethyldisiloxane is functionally equivalent to the listed chloro-containing compounds as an “organosilicon compound” of the invention, it remains the Examiner’s position that it would have been obvious to have substituted hexethyldisiloxane, or any of the other listed organosilicon compounds, for trimethylchlorosilane in Example 10.

Applicant argues that there is nothing in Lentz that would lead one skilled in the art to seek structural reinforcement of the Lentz aerogels, and nothing of record provides the motivation for one skilled in the art to combine Frank et al.'s discussion of mats of fibers to Lentz's discussion of filler aerogels. The Examiner notes that Frank et al. was applied to demonstrate prior art methods for producing hydrogels, to teach the known prior art steps of aging aerogels, increasing the mechanical stability of aerogels, and subcritical drying. Both references are similarly related to the production and use of xerogels. The test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 9-12, 14-15, 17, and 21-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lentz (US 3,122,520).

The claims remain rejected for the same reasons set forth in the prior Office actions as well as for the reasons discussed above in paragraph 2.

Claim Rejections - 35 USC § 103

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz.

Claim 13 remains rejected for the same reasons set forth in the prior Office action as well as for the reasons discussed above in paragraph 2.

7. Claims 3-8, 16, 18, 20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lentz as applied to claims 1-2, 9-15, 17, and 21-22 in view of Frank et al. (US 5,866,027).

The claims remain rejected for the same reasons set forth in the prior Office actions as well as for the reasons discussed above in paragraph 2.

Allowable Subject Matter

8. Claims 19 and 23 are allowed.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten Crockford Jolley whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

kcj
April 14, 2003


SHRIVE P. GECK
SUPERVISORY PATENT EXAMINER
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